

# **Citizens Advice response to the Access and Forward-looking Charges Significant Code Review - Consultation on Minded to Positions**

Citizens Advice  
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# **Distribution Connection Charging**

## **Summary**

Citizens Advice welcomes Ofgem's intention to ensure that effective charging signals are provided to network users in the best interests of consumers and the network, and to ensure that Net Zero is achieved at least cost. We believe that cost-reflective signals are key to delivering Net Zero at an efficient cost.

Whilst we are supportive of the general direction of travel, we are concerned that some elements of the distribution connection charging proposals do not provide sufficient signals and could lead to consumers funding inefficient system development.

We agree that the current charging regime for connections creates a signal that may dissuade connections that provide value to consumers and to the network. To reach Net Zero will require a better recognition of the value that low carbon technologies play in mitigating the risks of climate change. So, we believe that it is in the best interest of consumers to reform distribution connection charging.

However, we are concerned that the evidence provided by Ofgem is not strong enough to justify removing locational signals entirely. To protect consumers we believe some signalling is needed for users who have locational flexibility to avoid connecting to the network in locations which would trigger the need for reinforcement. This is especially important where reinforcement required is at high costs.

Ofgem suggests that reducing the strength of locational signals could result in an additional £380m of inefficient additional network investment due to the changes proposed in their minded-to consultation. Ofgem assert that these impacts *could* be outweighed by “other hard-to monetise benefits” such as if the changes encouraged all connections of solar and onshore wind to be brought forward by 9 months due to the carbon savings these bring. Ofgem also believe the changes would encourage DNOs to take a whole systems approach to connection planning rather than responding to needs incrementally.

Citizens Advice also encourages Ofgem to consider the interaction of these proposals with the ED2 price control process. It cannot be the case that this decision will simply inform the ED2 business planning process. The impact of these proposals on the levels of extra expenditure required in ED2 needs to be taken into account when reaching a decision on distribution connection charging. Given the ‘finely balanced’ nature of these proposals, if DNOs propose significantly higher levels of network investment in their plans than has been assumed in the modelling for this consultation, this should be reflected in the decision on these proposals. The costs to consumers through Distribution Use of System (DUoS) charges could be greater and any benefits which could have offset them may no longer be large enough. As these numbers could change within the next year, Ofgem should consider how this could be reflected in its decision making timing and processes.

We broadly agree that it is beneficial and fairer to demand customers to reduce the risk of ‘free riding’ where connectees face lower or no charges by virtue of when they are able to connect, and the associated incentive to avoid being the connectee that triggers reinforcement. We also note Ofgem’s impact assessment analysis of the risk and increased likelihood that, without reform, some domestic customers could face unfairly high connection charges, depending on when they connect. This may occur when a combination of electric vehicles (EVs), heat pumps and other appliances increase connection requirements to a three phase connection or fuse above 100A.

Given the concerns Citizens Advice has about the impact of these proposals we commissioned Energy Potential Consulting to explore and model the potential effects of the minded-to proposals by applying them to worked examples in the Common Connection Charging Methodology (CCCM) which is approved by

Ofgem. They also considered mitigations which Citizens Advice believe could provide important protections for demand customers and should be considered by Ofgem. Their report<sup>1</sup> and annexes have been submitted to Ofgem with this response.

## Key recommendations

**Recommendation 1** - Contribution to reinforcement should be reduced (but not removed) for both demand and generation. This should support low carbon technologies connecting whilst maintaining an efficiency signal.

**Recommendation 2** - Introduce a high cost cap (HCC) for demand connections to protect demand customers from excessive reinforcement costs.

**Recommendation 3** - Retain the high cost cap for generation connections with a one voltage rule (i.e. the HCC takes precedence), calculated relative to the additional demand capacity that is created, to ensure sufficient protection is provided.

**Recommendation 4** - Revise Impact Assessment in light of changes in proposed ED2 expenditure based on these proposals and review the proposals.

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<sup>1</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), August 2021

**Question 3a: Do you agree with our proposals to remove the contribution to reinforcement for demand connections and reduce it for generation? Do you think there are any arguments for going further for generation under the current DUoS arrangements? Please explain why.**

Citizens Advice believe that it is in the best interests of consumers to reform distribution connection charging. We are not convinced that any potential benefits to consumers of removing the contribution for demand connections and reducing it for generation, without adequate consumer protection, are outweighed by the costs consumers would face through additional and potentially inefficient reinforcement.

In summary, we support reducing (but not removing) the contribution to reinforcement costs for both demand and generation.

As noted above, we are also concerned that increases in DNO planned ED2 network investment, resulting from the proposed changes, could be significantly higher than has been modelled. This risks undermining the cost-benefit analysis.

For demand customers, we believe that a locational signal should be maintained for the efficient development of the distribution network. This is supported by Ofgem's Impact Assessment that shows a lower modelled cost impact compared to removing the contribution to reinforcement costs entirely. This also provides some protection for consumers from high-cost connections, which we view as necessary when making the connection boundary shallower. Additionally, it ensures that existing customers who would face no extension costs when increasing capacity still receive some charging signals (see 3e for more details).

We agree that the proposals increase fairness for connecting demand customers by removing the lottery of where demand connection applications are made and how much spare capacity there is on the network at the time of application.

For generation users also, we believe that it is in consumers' interests to remove barriers to low carbon technologies. However, without appropriate consumer protections against inefficient high-cost connections, we do not agree that it is

clearly in consumers' interests, as a whole, to reduce the locational signal for generation connections. As discussed under Question 3e we believe applying the HCC at the voltage above connection (i.e. the HCC takes precedence) is needed to protect consumers.

The proposal is to reduce connecting customers' contribution towards reinforcement by applying the 'same voltage rule' meaning users only pay for reinforcement at the same voltage level as the connection. While our analysis shows that in most of the CCCM worked examples the costs for generation connections do not change under the minded-to proposals, this is because reinforcement is typically needed at the same voltage level as the connection.

However, it is highly likely that increasing numbers of new generation connections in the future will require further reinforcement at the voltage level above. Under Ofgem's proposals and the application of the 'same voltage rule' connectees would not have to contribute towards any of this reinforcement, with costs being picked up by demand customers instead. This is illustrated by Table 1<sup>2</sup> and Table 2<sup>3</sup>.

Table 1 - Example 5: Connection of a new embedded generator that requires additional reinforcement involving Security and Fault Level CAFs. (Generation)

	<b>Current rules</b>	<b>Ofgem's minded-to proposals (same voltage HCC) (% change)</b>	<b>Minded-to proposals with one voltage HCC applied (% change)</b>
<b>Customer contribution to reinforcement</b>	£1.5m	£84k (-94%)	£1.5m (0%)
<b>DNO contribution to reinforcement</b>	£514k	£2m (+289%)	£515k (+0.19%)

Note - figures are rounded.

<sup>2</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 5, paragraph 6.1, August 2021

<sup>3</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 5, paragraph 6.1, August 2021

If the generation capacity was also increased to 5MVA:

Table 2 - Example 5: Connection of a new embedded 5MVA generator that requires additional reinforcement and higher generation capacity involving Security and Fault Level CAFs. (Generation)

	<b>Current rules</b>	<b>Minded-to proposals (same voltage HCC) (% change)</b>	<b>Minded-to proposals with one voltage HCC applied (% change)</b>
<b>Customer contribution to reinforcement</b>	£1.3m	£140k (-89%)	£1.2m (-8%)
<b>DNO contribution to reinforcement</b>	£774k	£1.9m (+145%)	£859k (+11%)

Note - figures are rounded.

In these examples Ofgem's proposals lead to significant savings to connectees and higher costs to demand customers. As the bulk of the reinforcement cost is driven by fault level, we also note that the reinforcement would be unlikely to benefit demand customers. In this particular example the generator is also connected at HV meaning it would also receive credits paid for by demand customers.

Due to the cost to consumers, and the dampened locational signal, we do not agree that the proposals are overall in consumers interest. Going further for generation would only exacerbate this issue, especially if they are receiving credits rather than DUoS charges.

### **Question 3b: What evidence do you have on the effectiveness of the current connection charging arrangements in being able to send a signal to users and what do you think will be the effect of our proposed changes? How does this vary between demand and generation connections?**

As the examples in response to Question 3a show, the signals sent to generators to connect efficiently will be significantly weakened. Ofgem acknowledges in its impact assessment<sup>4</sup> that the contribution to reinforcement for accepted offers is already less than 10% of the overall connection charge (and less than 15% for rejected offers). The proposals reduce this signal and the overall proportion of the charge further.

Reducing the charge will also reduce the signal to users to avoid connecting in areas where it is less efficient to do so. Ofgem's impact analysis<sup>5</sup> shows that the proportion of average costs for not accepted projects (demand and generation) are overwhelmingly the cost for extension assets, which is unchanged by Ofgem's proposals. However, the average cost of customer funded reinforcement is approximately 6 times more expensive than for accepted projects. If the proposals motivate previously inefficient connection applicants to connect, these costs would be borne by demand customers. What we also do not know is how many potential connecting generators do not progress to the application stage due to reinforcement costs. If this number is higher and these generators are also motivated to connect, the potential costs to demand customers could be even greater.

We do not believe that the proposals would influence the location of many new demand connections due to the many other factors that customers have to take into consideration and the fact that charges for extension assets will remain significantly higher as a proportion of the overall connection charge. We note that Ofgem's impact assessment<sup>6</sup> shows that the contribution to reinforcement for accepted and rejected demand offers is less than 10% of the overall connection charge. However, high demand users in a number of instances will

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<sup>4</sup> Ofgem, Figure 1 and Figure 2, paragraph 3.1.12., [Ofgem Access SCR - Impact Assessments](#)

<sup>5</sup> Ofgem, Figure 3, paragraph 3.1.14, [Ofgem Access SCR - Impact Assessments](#)

<sup>6</sup> Ofgem, Figure 1 and Figure 2, paragraph 3.1.12., [Ofgem Access SCR - Impact Assessments](#)

still have some locational options. They should be incentivised to make decisions that reflect overall value to the network at the point of investment.

For housing developers this will mean in practice they will continue to connect where developments are economical and influenced by a range of factors including planning permissions. Under the proposals, this is unlikely to change but developers will be able to connect more cheaply without consumers necessarily seeing any benefits. Table 3<sup>7</sup> and Table 4<sup>8</sup> demonstrate that these savings may be modest depending on the size of the development and the capacity required. We therefore question what positive impact removing reinforcement contributions would have on such a demand connection.

Table 3 - Example 6: Connection of Mixed Housing and Commercial Development (Demand)

	<b>Current rules</b>	<b>Ofgem's minded-to proposals</b>
<b>Customer contribution to reinforcement</b>	£300k	£0
<b>DNO contribution to reinforcement</b>	£1.2m	£1.5m

Note - figures are rounded.

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<sup>7</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 6, paragraph 6.2, August 2021

<sup>8</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 8B, paragraph 6.3, August 2021

Table 4 - Example 8b: Connection of housing development (Demand)

	<b>Current rules</b>	<b>Ofgems' minded-to proposals</b>
<b>Customer contribution to reinforcement</b>	£23k	£0
<b>DNO contribution to reinforcement</b>	£157k	£180k

Note - figures are rounded.

We also note that under the current rules there is, in theory, a small signal to developers to invest in technologies such as storage to reduce the impact on the upstream network, which could reduce the reinforcement required and their contribution towards it. While this signal may be outweighed by the complexity, Ofgem should consider the effects that removing the locational signal entirely would have on particular types of demand connections.

### **Question 3c: What are your views on the effectiveness of the current arrangements in facilitating the efficient development and investment in distribution networks? How might this change under our proposals where network companies are required to fund more of this work?**

The Impact Assessment is clear that the proposals lead to inefficient development of the distribution networks (potentially offset by wider benefits).

Ofgem places significant weight on the value of increased demand for connections to increase the number of connections delivered promptly. The ability to increase capacity in RIIO-2 to accommodate and deliver connections is assumed to be delivered. The connections process, we hear from stakeholders, can be a key hold-up and more needs to be done to take a holistic view of

connection queues. We would like to see a robust assessment of better demand management and connection responsiveness.

These proposals may largely remove a first mover disadvantage for demand consumers applying for connections. Yet there is more that can be done to incentivise early mover engagement via better visibility and tracking of connection requests (see response to Question 3d). The value of increased visibility of demand and generation connections will better support network interventions that will 'touch the network once' or are strategic.

**Question 3d: Do you agree whether the need to provide connection customers with certainty of price reduces the potential for capacity to be provided through other means such as flexibility procurement? How might this change under our proposals?**

There are wider issues affecting managing the potential need for additional capacity. Ofgem claim reform will not just enable strategic investment but also deliver strategic investment. There is a lack of evidence on the scale of the current or future issue on incremental reinforcement. The proposed reforms do not clearly state the scale of the issue currently or in the future.

Networks will need a carefully designed incentive, that is based on best available evidence of network needs, to choose strategic investment that will be in the best interests of consumers. Reducing reinforcement charges does not create this approach. Connection applications will still be made individually in Ofgem's proposed model - yet where multiple connections exist it would provide better value for the network to manage in a coordinated fashion. This should be an opportunity to incentivise connectee behaviour. For example, where a connectee wants to make a connection they could make an expression of interest. This could be publicly shared in the knowledge that the value proposition and cost will reduce with further connection requests if significant

reinforcement is required. This aligns the system operator needs and connectees to support informed strategic investment where possible.

The ability for a network to consider reinforcement and alternatives on more comparable terms could result from shallower connection boundaries, if the DNOs are incentivised effectively to do so. However, the proposed model could go further to incentivise connectees to the network to incentivise connectee expressions of interest.

### **Question 3e: What are your views on whether we should retain the High Cost Cap? Is there a case for reviewing its interaction with the voltage rule if customers no longer contribute to reinforcement at the voltage level above the point of connection?**

Citizens Advice recommends that Ofgem:

- **Introduce a high cost cap (HCC) for demand connections to protect demand customers from excessive reinforcement costs**
- **Retain the high cost cap for generation connections with a one voltage rule, calculated relative to the additional demand capacity that is created**

#### **Demand**

Table 5<sup>9</sup> demonstrates how removing the reinforcement charge from demand connections can significantly reduce the overall connection charge in practice. The Ofgem impact assessment acknowledges that there is little evidence on the price elasticity of demand customers and that other non-electricity costs are likely to play a larger part in deciding where to request a new connection.

This supports reducing the contribution to reinforcement but does not provide sufficient evidence to justify removing it entirely. Protection should be provided against inefficient, high-cost connections by introducing a HCC for demand

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<sup>9</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 10, paragraph 6.4, August 2021

customers. The need to introduce a HCC is greater if the contribution to reinforcement costs is removed, rather than reduced, for demand customers.

Table 5 - Example 10: A new connection application for commercial Premises on a meshed 11kV distribution system requiring Reinforcement.

	<b>Current rules</b>	<b>Ofgem's minded-to proposals</b>
<b>DNO contribution to reinforcement</b>	£1,015,229	£1,314,000
<b>Customer extension asset</b>	£135k	£135k
<b>Customer contribution to reinforcement</b>	£299k	£0
<b>Total customer cost</b>	£434k	£135k

Note - figures are rounded.

Such large reductions in cost would also apply to those who have existing connections and wish to increase their capacity requirements. We note that this is the intention of Ofgem's proposals to support industrial processes to decarbonise.

However, we are concerned about the implications where customers are able to increase their capacity without the need to strengthen their sole use (extension) assets, unless the capacity increase request is particularly large. Such an increase would effectively be free of charge to the connection customer (though some contribution would be made through increased DUoS charges) and would instead be funded by demand customers.

An unintended consequence of the proposals could be that with most price signals removed, customers ask for more capacity than they need due to the limited costs incurred. In example 10, the cost of reinforcement relative to the capacity requested is £328.5/kVA which is deemed excessive for a generation

customer. Under example 12<sup>10</sup> the cost is £187.5/kVA which is deemed just below the threshold considered excessive for generation. This supports the introduction of a HCC for demand, to protect customers from excessive reinforcement under Ofgem's proposals. How this would be calculated would require consideration by Ofgem but we consider it more appropriate if costs are relative to the capacity created.

We would expect the balance of DUoS charges to change as the extent of customer contribution to connection costs changes. Ofgem need to consider the distributional impacts of this. Ofgem could also consider enhancing the signal in DUoS charges faced by existing and new demand customers by increasing capacity charges and reducing usage charges for tariffs with a Maximum Import Capacity (MIC). This would have the effect of encouraging customers to keep their MIC at the level they require. This could be employed as an interim measure while wider DUoS reforms are being considered.

## **Generation**

Ofgem proposes to reduce the reinforcement contribution by only applying charges and the HCC at the same voltage level of connection. The analysis in Table 6<sup>11</sup> highlights that in the case of CCCM example 5 the HCC at the same voltage level does nothing to protect consumers from excessive costs.

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<sup>10</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 12: Non-Secure Connection With Secure Reinforcement, paragraph 6.5, August 2021

<sup>11</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 5: Connection of a new embedded generator that requires additional reinforcement involving Security and Fault Level CAFs.

Table 6 - Example 5: Connection of a new embedded generator that requires additional reinforcement involving Security and Fault Level CAFs. (Generation)

	Current rules		Ofgem's minded-to proposals (same voltage HCC)		Minded-to proposals with the one voltage HCC applied	
	Reinforcement in excess of HCC	Total contribution	Reinforcement in excess of HCC	Total contribution	Reinforcement in excess of HCC	Total contribution
<b>Customer contribution</b>	£1.48m	£1.574m	£0	£84k	£1.48m	£1.573
<b>DNO contribution</b>	£0	£514k	£1.48m	£2m	£0	£515k

Note - figures are rounded.

In Table 7<sup>12</sup>, although the size of the generator is increased, the apportionment rules and HCC result in lower overall contributions by the generator. In this example, this is because the HCC is calculated in respect of the size of the generator rather than the amount of capacity created. We are concerned that this does not provide protection to consumers and, in this case, demand customers would also be funding higher DUoS credits to the generator.

<sup>12</sup> Energy Potential Consulting, [Potential Impacts of Changes to the Connection Boundary: A Report for Citizens Advice](#), Example 5: Connection of a new embedded 5MVA generator that requires additional reinforcement and higher generation capacity involving Security and Fault Level CAFs (assuming the fault level contribution increases proportionately to 16.7MVA).

Table 7 - Example 5: Connection of a new embedded 5MVA generator that requires additional reinforcement and higher generation capacity involving Security and Fault Level CAFs. (Generation)

	Current rules		Minded-to proposals (same voltage HCC)		Minded-to proposals (one voltage HCC)	
	Reinforcement in excess of HCC	Total contribution	Reinforcement in excess of HCC	Total contribution	Reinforcement in excess of HCC	Total contribution
<b>Customer contribution</b>	£1.089m	£1.314m	£0	£140k	£1.089m	£1.229m
<b>DNO contribution funded through DUoS</b>	£0	£774k	£1.089m	£1.948m	£0	£859k

Note - figures are rounded.

To mitigate against excessive costs to consumers, the HCC should be retained and applied to one voltage above the connection voltage. The HCC could also be calculated relative to the additional *demand* capacity created to reflect the risk that generation capacity could be artificially increased to reduce charges. However, consideration would need to be given to how the cap would apply to fault level reinforcement as these are unlikely to provide additional demand capacity.

Generation connections also create additional costs for demand customers through the payment of credits. In the absence of wider DUoS reforms, the general application of generation credits should be reconsidered, for example in areas with large amounts of generation.

**Question 3f: What are your views on the recovery of the costs associated with transmission that are triggered by a distribution connection? Does this need to be considered alongside wider charging reforms or could a change be made independently?**

No Answer.

**Question 3g: What are your views on the likelihood of inefficient investment under our proposals (e.g., an increase in project cancellations after some investment has been made)? What are the arguments for and against further considering introducing liabilities and securities to mitigate this risk?**

No Answer.

**Question 3h: What are your views on whether the interactions between our connection reforms and the ECCR must be resolved before we are able to implement our proposed reforms? How do you factor in the effects of the ECCR (if at all) into decision making, given the levels of uncertainty around subsequent connectee(s)? What suggestions do you have to make our policy and the ECCR work together most efficiently?**

No answer.

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